UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,896	04/06/2006	Shuji Ikegami	4633-0166PUS1	3390

2292 7590 06/09/2009
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
COX, ALEXIS K	

ART UNIT	PAPER NUMBER
3744	

NOTIFICATION DATE	DELIVERY MODE
06/09/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/574,896	IKEGAMI ET AL.	
	Examiner	Art Unit	
	ALEXIS K. COX	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *2 and 3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1 and 5-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. The reply filed on 2/26/2009 is not fully responsive to the prior Office Action because of the following omission(s) or matter(s): Regarding new claims 13 and 14, no explicit statement was made indicating them to read on a specific species. See 37 CFR 1.111. Since the above-mentioned reply appears to be *bona fide*, applicant is given **ONE (1) MONTH or THIRTY (30) DAYS** from the mailing date of this notice, whichever is longer, within which to supply the omission or correction in order to avoid abandonment. EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).

Claim Objections

2. Claim 1 is objected to because of the following informalities: on line 2 of claim 1, the term "heating medium" should be changed to "a heating medium"; on line 3 of claim 1, the term "a heating medium" should be changed to "the heating medium". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The phrases "without passing through said adsorption heat exchangers" and "without passing through said air heat exchangers" constitute unsupported material. The word "without" is nowhere present in the specification, and the drawings fail to clearly express the limitation.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Rhodes (US Patent No. 4,700,550).

Regarding claim 1, Rhodes discloses an air conditioning apparatus which is provided with a heating medium circuit (see figures 7-9) for the flow of heating medium which includes in the heating medium circuit a plurality of heat exchangers (12, 14, 82, 84; see column 9 lines 53-56) for effecting heat exchange between a heating medium and an air stream (see column 10 lines 3-5), wherein at least one heat exchanger is made up of an adsorption heat exchanger with an adsorbent supported on a surface thereof (see column 10 lines 8-10). Rhodes further discloses the heating medium circuit to include at least two air heat exchangers which mainly perform air sensible heat processing (82, 84, see column 16 lines 23-27) and at least two adsorption heat

exchangers which mainly perform air latent heat processing (14, 16, see column 15 lines 30-33).

Further regarding claim 1, the applicant is reminded that a recitation of the manner in which an apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims.

Regarding claim 5, Rhodes discloses the heating medium circuit to be made up of a refrigerant circuit through which a refrigerant is circulated to thereby perform a vapor compression refrigeration cycle (see column 2 lines 32-38).

Regarding claims 6 and 7, the heating medium circuit is made up of a cold and hot water circuit for the flow of cold and hot water (see column 25 lines 44-51).

Regarding claim 8, Rhodes discloses the air conditioning apparatus to have a control unit (87, see column 17 lines 34-38) which switches the flow of heating medium in the heating medium circuit and the distribution of air to thereby perform (a) a moisture absorbing operation in which, while cooling an adsorbent in an adsorption heat exchanger, moisture in an airstream flowing through the adsorption heat exchanger is adsorbed by the adsorbent and (b) a moisture releasing operation in which, while heating an adsorbent in an adsorption heat exchanger, moisture is released to an airstream flowing through the adsorption heat exchanger (see column 17 lines 38-49).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhodes (US Patent No. 4,700,550) in view of Kirby (US Patent No. 4,703,886).

Regarding claims 9 and 10, Rhodes discloses the automatic control of the system by a humidistat (see column 17 lines 34-38). It is noted that Rhodes does not explicitly disclose a control unit provided with a switching interval setting part for setting, depending on the latent heat load, a time interval at which switching between the

moisture absorbing operation and the moisture releasing operation is accomplished, or for the switching interval setting part to be configured such that as the latent heat load increases the time interval at which switching between the moisture absorbing operation and the moisture releasing operation is accomplished is set to a lower setting value. However, Kirby explicitly discloses a programmable humidistat (see column 1 lines 59-61) using the same processor as and possibly in combination with a programmable thermostat (see column 2 lines 39-43 and column 1 lines 53-55). As the processor used by Kirby performs control according to timed predictions of temperature (see column 1 lines 22-25), it is capable of performing the control of the system of Rhodes by setting a time interval at which switching between the moisture absorbing operation and moisture releasing operation is accomplished, and further of decreasing the time interval at which switching between the moisture absorbing operation and the moisture releasing operation are accomplished as the latent heat load increases, as the saturation point of the adsorbent material will be reached faster when there is more humidity being pulled out of the air. Additionally, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the controller of Kirby in the system of Rhodes, as Rhodes fails to specify a specific controller and the controller of Kirby is designed for used in a system such as that of Rhodes, and the use of the controller of Kirby would reduce the cost of manufacturing the system of Rhodes by not requiring the design of a new controller.

11. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhodes (US Patent No. 4,700,550, hereinafter referred to as Rhodes '550) in view of Rhodes (US Patent No. 4,786,301, hereinafter referred to as Rhodes '301).

Regarding claims 13 and 14, Rhodes '301 explicitly discloses that multiple arrangements of adsorbent and traditional heat exchangers, including series and parallel, are equivalent and obvious variants on the system (see column 13 lines 20-27). The parallel arrangement of Rhodes '301 would result in the airstream applied to the latent heat exchangers not passing through the sensible heat exchangers, and the airstream applied to the sensible heat exchangers not passing through the latent heat exchangers. As the systems of the Rhodes patents are similar in structure and function, it would have been obvious to one of ordinary skill in the art to apply the variant patterns of the Rhodes '301 patent to the Rhodes '550 patent in order to better fit the system into available space.

Response to Arguments

12. Applicant's arguments filed 2/26/2009 have been fully considered but they are not persuasive.

Regarding the applicant's argument that Rhodes fails to disclose or suggest at least two air heat exchangers which mainly perform air sensible heat processing and at least two adsorption heat exchangers which mainly perform air latent heat processing, the examiner respectfully disputes this allegation. The adsorption exchangers of Rhodes inherently perform latent heat processing, as latent heat is considered to be the portion of the load caused by relative humidity, and adsorption exchangers operate by

reducing relative humidity. The air heat exchangers are explicitly disclosed to perform sensible heat processing (see column 15 lines 28-33), as a cooling which reduces temperature without reducing absolute humidity is one which is mainly performing sensible heat processing. The fact that the adsorption exchangers of Rhodes also perform sensible heat processing does not alter the effect of the system in a manner incompatible with the one claimed in claim 1.

Additionally, the operation of the apparatus of Rhodes in the manner required constitutes an intended use, rather than a structural limitation. This is further reason to consider this argument unpersuasive.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Forkosh (US Patent Application Publication No. 2008/0307802) discloses a water content management system.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXIS K. COX whose telephone number is (571)270-5530. The examiner can normally be reached on Monday through Thursday 8:00a.m. to 5:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AKC/

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744